

**REMARKS/ARGUMENTS**

Reconsideration of this application in light of the amendments and submissions is courteously solicited.

Applicants submit herewith a declaration of Eric Wolfsgruber, one of the co-inventors of the instant application. The declaration clearly establishes a structural difference between the product produced for metal powder in accordance with the present invention and a product produced from molten metal as taught by Valdo. It is submitted that the declaration overcomes the prima facie case of obviousness set forth by the examiner.

In addition to the claims previously submitted, Applicants now submits new independent claims 23 and 24. Independent claim 23 specifies the characteristics of the metal foam. Claim 24 is a product by process claim. Both new independent claims 23 and 24 are patentable over the prior art.

In light of the foregoing, it is courteously submitted that all of the claims as pending patentably define over the prior art and an early indication of same is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in

this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any additional fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

Eric Wolfsgruber et al.

By 

Gregory P. LaPointe  
Attorney for Applicants

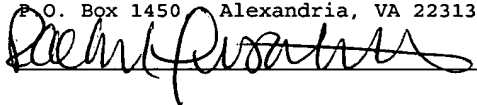
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Date: June 29, 2005

I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313" on June 29, 2005.





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Eric Wolfsgruber et al. Confirmation No.: 3047  
Serial No. : 10/057,547  
Filed : January 25, 2002  
TC/A.U. : 1775  
Examiner : John J. Zimmerman  
  
Docket No. : 02-121  
Customer No.: 34704

DECLARATION UNDER 37 C.F.R. 1.132

I, Dr. Eric Wolfsgruber declare as follows:

That, I am a co-inventor of U.S. Patent Application Serial No.09/647,411.

That, I am a graduate of the University of Technology of Vienna, Austria, where I received a doctorate degree in Technical Chemistry in 1997.

That, from 1997 to the present I have been employed at MEPURA.

The following data establishes the superiority of powder metallurgically produced metal foam of the present invention.

Two AlSi12 foams were prepared as follows:

FOAM A from molten metal per VALDO '666

AlSi12 was molten in an electrical furnace at approx. 600°C. 1% of a foaming agent (TiH<sub>2</sub>-powder) was poured in the melt, after decomposition of the foaming agent the melt was poured into a mould having the shape of a hollow cylinder and cooled rapidly. The resulting foam is FOAM A.

FOAM B in accordance with the present invention:

Al + 10 - 12% Si powder with a grain size of 0 - 500  $\mu\text{m}$  as well as 1% foaming agent ( $\text{TiH}_2$ -powder) have been admixed thoroughly and compressed in a die. The pressed densified material was placed into a heatable mould (shape of a hollow cylinder) and shortly heated up to  $600^\circ$ . The resulting foam is a composite which was prepared avoiding the molten phase - the powder grains only soften and adhere to each other during the short heating thereof to have  $\text{TiH}_2$  decompose producing gas and foaming the mixture.

The physical characteristics thereof where as follows:

absolute density:

FOAM B AlSi12 foam: 0,4 - 0,8  $\text{g/cm}^3$

FOAM A AlSi12 foam: 0,1 - 0,4  $\text{g/cm}^3$

structure:

FOAM A: Partially open celled foam (irregular pore size distribution)

FOAM B: Mainly closed cells (homogeneous pore size distribution)

modulus of elasticity (GPa)

FOAM A: 0.4 - 1.0

FOAM B: 1.7 - 12

compressive strength (MPa)

FOAM A: 1.3 - 1.7

FOAM B: 1.9 - 14.0

yield stress (MPa)

FOAM A: 1.6 - 1.8

FOAM B: 2.0 - 20.0

tensile strength (MPa)

FOAM A: 0.05 - 1.9

FOAM B: 2.2 - 30.0

Photomicrographs of sections of the materials FOAM A and FOAM B are attached as one Appendix. The photomicrographs show longitudinal sections of foamed bodies having the shape of a hollow cylinder. By visual inspection it was found that the pore distribution of FOAM A is uneven. There are big spaces which weaken the foamed structure. Contrary thereto the pore distribution of FOAM B is characterized by homogeneous distributed pores of about the same size.

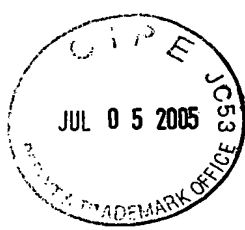
The undersigned declares further that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of the instant document and of the application Serial No. 10/057,547 or any patent issuing thereon to which the instant document refers.

Date \_\_\_\_\_

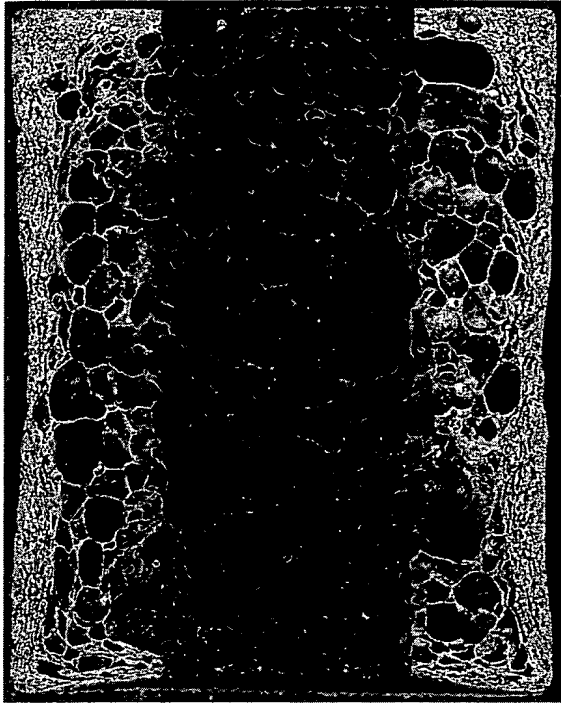
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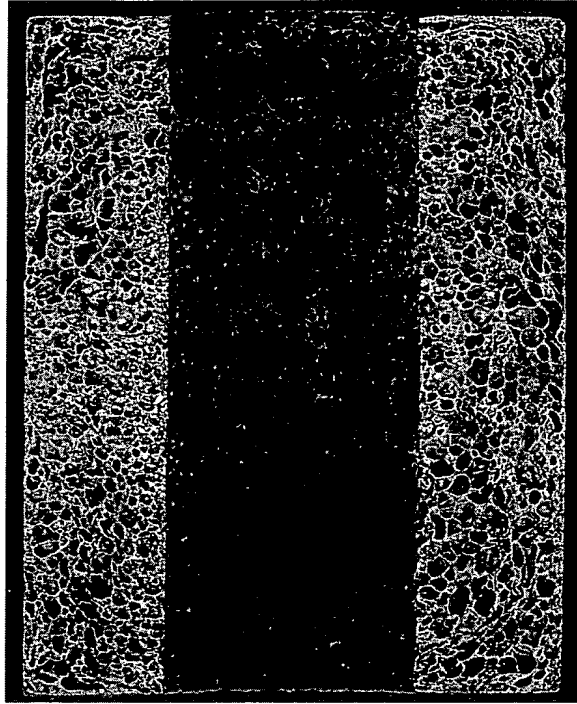
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Title



APPENDIX



Section of FOAM A



Section of FOAM B

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